

## REMARKS/ARGUMENTS

This is a response to the March 26, 2003, Office Action pursuant to 37 C.F.R. § 1.111.

Claims 2 through 22, 27, 29 through 55, and 60 are pending in the application.

**1. Request for Telephone Interview with the Examiner**

The applicant requests that the Examiner conduct an interview with their counsel **before issuing a further action**. An interview is believed necessary to explain in detail the distinguishing elements of the applicant's claimed invention over the cited art.

**2. Rejection of Claims 2 through 19, 27, 29 through 53 and 60 under 35 U.S.C. § 103(a)**

The Examiner rejects claims 2 through 19, 27, 29 through 53 and 60 under 35 U.S.C. § 103(a), stating that the claims are unpatentable over U.S. Patent Number 4,450,531 to Kenyon et al. in view of U.S. Patent Number 5,790,671 to Cooper. The applicant traverses this rejection and requests reconsideration.

**a. Claim 60**

The Examiner admits that the Kenyon et al patent fails to disclose the step of periodically recording samples of ambient noise using a sounds transducer. The Examiner relies on the Cooper patent to satisfy this deficiency.

The Kenyon et al. patent, however, also fails to disclose or suggest the step of "normalizing the amplitude of a signal output of the transducer or a signal derived therefrom within a first predetermined range D" as recited in claim 60. The Kenyon et al. patent discloses filtering and digitizing a plurality of signal segments taken from a recorded program to be broadcast before the signal segments are "prenormalized" to provide "normalized" reference segments for storage. The signal segments of the Kenyon et al. patent are "prenormalized" by "scaling each reference segment pattern so that it will have a fixed total power for the segment." (See the Kenyon et al. patent in column 4 at lines 36 through 46.) The normalization disclosed in Kenyon et al. patent does not prevent the amplitude of the signal segments from locally exceeding a certain upper limit and cannot therefore disclose or suggest "normalizing the amplitude" as required by claim 60.

The Kenyon et al. patent also fails to disclose or suggest the step of "mapping the normalized amplitude values of the sampled ambient noise onto a second predetermined range of values using a non-linear mapping function to obtain an emphasis of selected values ranges within the first or the

second predetermined ranges" as recited in claim 60. The Kenyon et al. patent discloses that the "normalized zero filled reference segment R is then Fourier transformed." (See the Kenyon et al. patent in column 4 at lines 49 through 51.) A Fourier transformation is not a mapping, in that the transformation takes into account all values within a certain interval for the calculation of each of the set of result values. Claim 60 requires that "the normalized amplitude values of the sampled ambient noise" are mapped (i.e. a one-to-one correspondence) "onto a second predetermined range of values."

The Examiner proffers that "it would have been obvious to one of ordinary skill in the art to modify the teachings of [the Kenyon patent] with recording ambient noise levels because it would allow for adjusting the audio signal so that areas of high ambient noise can be suppressed and therefore increase the intelligibility of the audio signal (cooper, col. 1 lines 33-42)." (See the March 26, 2003, Office Action on page 3 at lines 2 through 5.) It is not clear why one of ordinary skill in the art would be motivated to modify the Kenyon et al. method for matching a broadcast signal to stored reference signal segments by pattern matching correlation signal peaks and power patterns at said points with the method for automatically adjusting audio response for improved intelligibility of the Cooper patent. Even if one of ordinary skill in the art was motivated to combine the Kenyon et al. patent with the Cooper patent, the method for storing an electric signal as recited in claim 60 would not be rendered obvious. The method as recited in claim 60 creates an ultra-compact storage device which can conveniently be worn by an individual whose listening behavior is being surveyed. The claimed invention is not a method for recognizing a broadcast signal as disclosed or suggested by the Kenyon et al. patent even if the broadcast signal of the Kenyon et al. patent is modified for improved intelligibility as disclosed in the Cooper patent.

Claims 2, 3, 11 through 13, 17, 18, 19, 27, 29 through 32, 42 through 48, and 53 are dependent upon claim 60 and should be allowed for the reasons explained above. In addition, these claims recite features which, in combination with the features of claim 60, are not taught or suggested by the Examiner's citations. Therefore, this rejection should be withdrawn.

**b. Claim 4**

The Kenyon et al. patent fails to disclose the step of "dividing the audio signal into at least two band signals by filtering" as recited by claim 4. (See the specification on page 9 at line 30 through page 11 at line 11 and Figure 2.) The Kenyon et al. patent discloses the use of only one

frequency band. The method of the Kenyon et al. patent discloses a first stage of pre-filtering a broadcast signal to select a frequency portion of the audio spectrum that has stable characteristics and a second stage of filtering to obtain a good stable narrow bandwidth signal. (See the Kenyon et al. patent in column 4 at line 60 through column 5 at line 2 and in Figure 1.) Figure 6 of the Kenyon et al. patent shows a broadcast signal that has been divided into several broadcast signal elements. The Kenyon et al. patent discloses a method of dividing a long broadcast audio signal into several small segments, not a method for frequency band splitting as required by claim 4. (See the Kenyon et al. patent in column 6 at lines 25 through 37.) This deficiency is not remedied by the disclosure of the Cooper patent.

Claims 5 through 10 and 33 through 41 are dependent upon claim 4 and should be allowed for the reasons explained above. In addition, these claims recite features which, in combination with the features of claim 4, are not taught or suggested by the Examiner's citations. Therefore, this rejection should be withdrawn.

**c. Claim 16**

The Kenyon et al. patent fails to disclose the step of "normalization" as recited in claim 16. The normalization factor claimed by the applicant requires a step of taking the maximum value of a hearing sample. (See the specification on page 11 at line 18 through page 13 at line 16 and Figures 3 and 4.) The Kenyon et al. patent discloses the step of taking the square root of the total power of a segment to obtain a root mean square amplitude of the segment. The root mean square value is then divided into each point P in the segment to obtain a fixed scale factor K where  $K^2$  is the variance of each segment. (See the Kenyon et al. patent in column 4 at lines 36 through 52.) This deficiency is not remedied by the disclosure of the Cooper patent.

Claims 49 through 52 are dependent upon claim 16 and should be allowed for the reasons explained above. In addition, these claims recite features which, in combination with the features of claim 16, are not taught or suggested by the Examiner's citations. Therefore, this rejection should be withdrawn.

**3. Rejection of Claims 20, 21, and 54 under 35 U.S.C. § 103(a)**

The Examiner rejects claims 20, 21, and 54 under 35 U.S.C. § 103(a), stating that the claims are unpatentable over U.S. Patent Number 4,450,531 to Kenyon et al. in view of U.S. Patent Number

5,790,671 to Cooper and U.S. Patent Number 5,754,798 to Uehara. The applicant traverses this rejection and requests reconsideration.

Claim 20, 21, and 54 are dependent upon claim 60 and should be allowed for the reasons explained above. In addition, these claims recite features which, in combination with the features of claim 60, are not taught or suggested by the Examiner's citations. Therefore, this rejection should be withdrawn.

The Cooper patent relates to improving the intelligibility of received speech in a radio transceiver by automatically adjusting audio response in accordance with ambient noise levels. (See the abstract of the Cooper patent.) The Cooper patent does not disclose or suggest a method for storing an electrical signal representing recorded ambient noise in compressed form as claimed by the applicant. Even if it could be said to be obvious to modify the Kenyon et al. patent according to anything disclosed or suggested by the Cooper patent and the Uehara patent, the combination would not satisfy the method of independent claim 60.

The Examiner's citations do not make obvious the claimed subject matter as a whole. This rejection should be withdrawn.

**4. Rejection of Claims 22 and 55 under 35 U.S.C. § 103(a)**

The Examiner rejects claims 22 and 55 under 35 U.S.C. § 103(a), stating that the claims are unpatentable over U.S. Patent Number 4,450,531 to Kenyon et al. in view of U.S. Patent Number 5,790,671 to Cooper and U.S. Patent Number 5,901,246 to Hoffberg et al. The applicant traverses this rejection and requests reconsideration.

Claims 22 and 55 are dependent upon claim 60 and should be allowed for the reasons explained above. In addition, these claims recite features which, in combination with the features of claim 60, are not taught or suggested by the Examiner's citations. Therefore, this rejection should be withdrawn.

The Cooper patent relates to improving the intelligibility of received speech in a radio transceiver by automatically adjusting audio response in accordance with ambient noise levels. (See the abstract of the Cooper patent.) The Cooper patent does not disclose or suggest a method for storing an electrical signal representing recorded ambient noise in compressed form as claimed by the applicant. Even if it could be said to be obvious to modify the Kenyon et al. patent according to

anything disclosed or suggested by the Cooper patent and the Hoffberg et al. patent, the combination would not satisfy the method of independent claim 60.

The Examiner's citations do not make obvious the claimed subject matter as a whole. This rejection should be withdrawn.

**5. Conclusion**

The application is believed to be in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,

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